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P A P E R S
I N
C H E M I S T R Y.

C H E M I S T R Y.

The Thanks of the Society were given to
WILLIAM PATTENSON, of Ibornden,
in Kent, Esq. for the following Commu-
nications, relative to a Composition for
preserving WEATHER-BOARDING.

S I R,

I TROUBLE you with this letter on
the following occasion. I have often
thought something much wanted for
preserving Weather-boarding, &c. from the
injuries of the weather; tar and oker, and
other mixtures recommended for the pur-
pose, I have tried, but do not find they an-
swer: I therefore have made many expe-
riments, to discover a composition better
adapted to the purpose, and think I have
found one which answers my expectation:
it is impenetrable to water, is not injured
by the action of the weather, or heat of the
sun,

fun, which hardens it, and consequently increases its durability; it is much cheaper than paint, and more lasting.

I have sent a small specimen,* which has been exposed to the weather for many months; it has rather a rough appearance, but that may be easily altered in the preparation: if you think it deserving the Society's notice, you will please to acquaint them with it; and should they suppose it an article of public use, I shall be happy in communicating to them its composition and mode of preparation.

I am, SIR,

With great respect,

Your most obedient servant,

WILLIAM PATTENSON.

*Iborden,
Feb. 5. 1794.*

Mr. MORE.

* These small specimens are reserved in the Society's Repository.

SIR,

S I R,

I RECEIVED the favour of your letter ; and with great pleasure inform the Society of the composition for preserving Weather-boarding, &c. which is as follows :

Three parts air-slacked lime, two of wood-ashes, and one of fine sand, or sea-coal ashes ; -sift these through a fine sieve, and add as much linseed oil as will bring it to a consistence for working with a painter's brush ; great care must be taken to mix it perfectly. I believe grinding it as paint would be an improvement ; two coats are necessary ; the first rather thin, the second as thick as can conveniently be worked. I am not certain as to the length of time the samples I sent you were exposed to the weather, but suppose seven or eight months ; it was exposed immediately on its being applied to the wood ; and from the nature of its composition, there is no doubt but it is very durable ; as it certainly will im-

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prove in hardness by time, and is much superior for the purpose to any thing I know of.

I am,

SIR,

Your obliged,

And obedient servant,

WILLIAM PATTENSON:

Ibornden,
March 12, 1794.

Mr. MORE.

The

The GOLD MEDAL was this Session voted to Mr. HENRY BROWNE, of Derby, for his ingenious construction of an EVAPORATOR, for the use of Chemists and Preparers of the various kinds of Salts, as shewn in the Print annexed, and described in the following Letter; and still more fully to explain the Machine, a complete Model, presented by Mr. BROWNE, is reserved in the Society's Repository, for the inspection of the Public.

S I R,

I HEREWITH send you a Plan and Model of a Furnace I use for Evaporation, and have found more serviceable for that purpose than any copper or boiler I ever saw; and I am of opinion it might be advantageously applied to the drying malt, as the heat is more equally dispersed, and the vapour carried off, much quicker than by the

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mode now practised. I have not observed the exact quantity of moisture which may be exhaled in a given time by a given quantity of fuel ; but I can with safety say that at least one half of the fuel, and a great deal of trouble, is saved by this contrivance ; as it does not require near the attendance that boilers in general do, in supplying it with liquor or fuel, which need only be done twice in twenty-four hours ; for the fire, being confined in the first instance to the bottom, and the evaporation being regular, a certain quantity either of fuel or liquor may be put in at certain times : but the greatest advantage this Furnace possesses, and the only part I flatter myself may be called new, is, the atmosphere being rendered of an equal heat with the liquor ; by which means more moisture is carried away by the current of hot air, than by any other means I am acquainted with.

The utility of this Evaporator, therefore, is in my opinion twofold : first, the evaporation is much quicker, with a less quantity
of

of fuel, than in the generality of the boilers now in use; secondly, the operator, as well as the whole neighbourhood, cannot in the least be affected or annoyed, let the vapour or steam be ever so pernicious. That evaporation is much greater by this mode, will appear very plain, when the course of the heat is pointed out: it is first carried under the vessel, then reverted back on the sides, and finally it is carried over the surface; by which means the air, that is in contact with the liquor, is so heated and highly rarified, that the fluid is raised into vapour or steam, much quicker, and with less fuel, than if the atmosphere was cold; and, as the air necessary to keep the fuel in combustion passes over the surface of the liquor, every pernicious vapour is carried with it into the fire, where it is decomposed, or at least so changed as to be no longer pernicious.

As the diminution of labour in all operations is so much to be wished, I think it necessary to add, that by this contrivance

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one man can do more work than three can in the usual method, the fire-place being so contrived, that as much fuel may be put on at one time as will serve twelve, or even twenty-four hours ; and the same may be said of the supplying the vessel with fresh liquor.

I am, SIR,

Your very humble servant,

HENRY BROWNE.

Derby, Jan. 31, 1794.

Mr. MORE.

Fig. 1

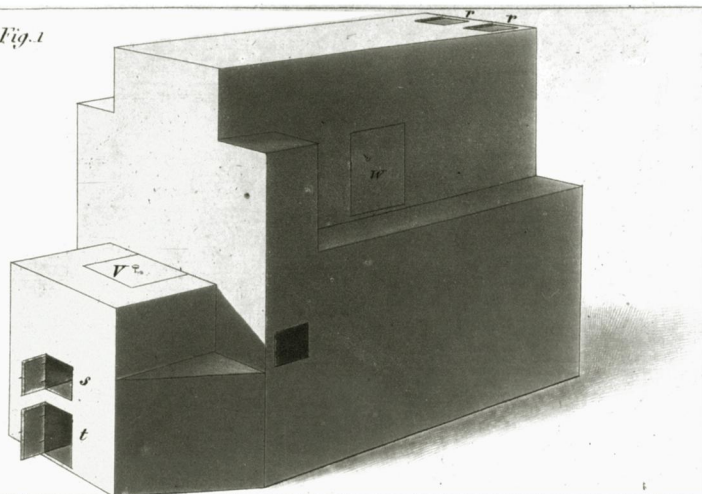


Fig. 2

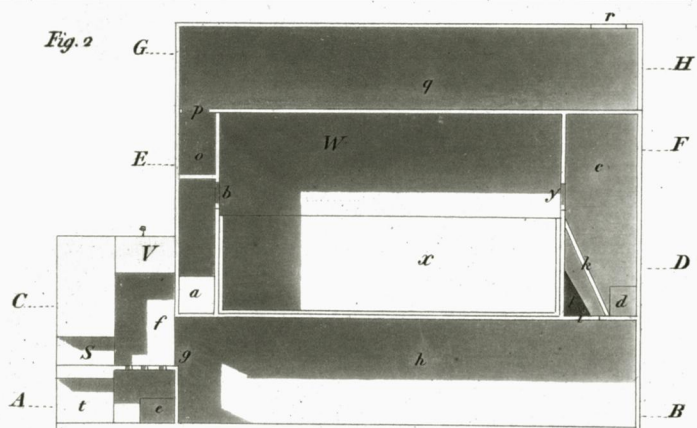


Fig. 3

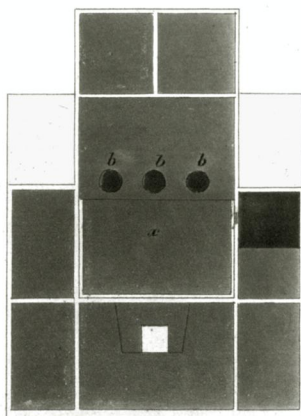


Fig. 4.

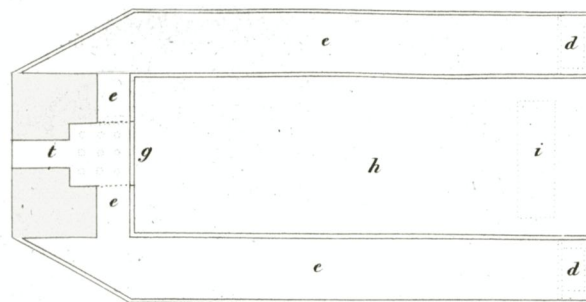


Fig. 5

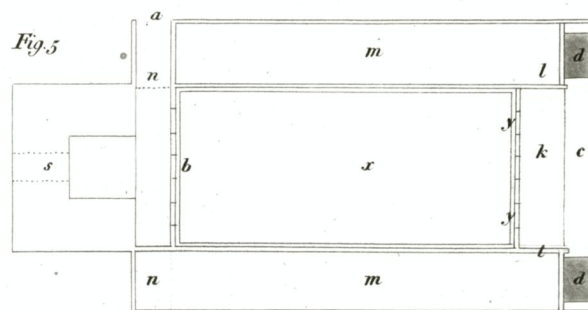


Fig. 6

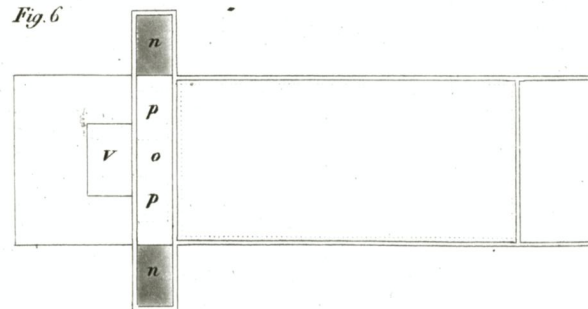
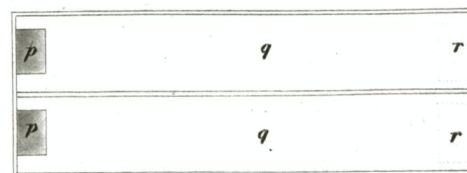


Fig. 7



DESCRIPTION of the PLATE of Mr.
BROWNE'S EVAPORATOR.

Fig. 1. Is a view of the whole Furnace or Evaporator complete.

Fig. 2. A section lengthwise of the Boiler, Fire-place, &c.

Fig. 3. A transverse section of the Boiler and Flues, looking towards the Fire-place.

Fig. 4. A plan from A. to B. of Fig. 2.

Fig. 5. Plan from C. to D.

Fig. 6. Plan from E. to F.

Fig. 7. Plan from G. to H.

a. The opening or hole through which the air enters ; and being admitted through the three holes *b, b, b*, passes over the surface of the liquor in the cistern or boiler *x*, and then passing again by similar openings at the opposite end of the cistern *y, y*, descends by the vacuity *c, c*, and, by the holes *d, d*, is conveyed, by the passages *e, e*, to the ash-hole or under-side of the grate, and thus serves to actuate the fire, bringing with it the steam arising from the boiler.

The air and steam, having thus served the purpose of actuating the fire, are, with the smoke arising from the fuel, conveyed by the back of the furnace *g, g*, under the boiler along the passage *b, b*; and, rising through an aperture *i, i*, under an inclined cast-iron plate *k, k*, passes through two holes, *l, l*, into the passages *m, m*, and rises, by two other holes *n, n*, into a vacuity *o, o*, whence it arises again by two holes *p, p*, enters the flues *q, q*, and thence into the chimneys *r, r*.

s, s. The stoking-hole of the furnace.

t, t. The ash-hole.

v. v. The opening through which the fuel is put into the furnace.

w. The door, or opening to the cistern.

The same letters refer to the same parts in all the several drawings.

The

The Thanks of the Society were given to ROBERT BATSON, of Limehouse, Esq. for the following Communications relative to the DRY-ROT IN TIMBER; and it is requested that any persons who may think proper to repeat Mr. Batson's Experiment, will favour the Society with some account of the result.

S I R,

THE Society for the Encouragement of Arts, Manufactures, and Commerce, continuing to offer a Premium for discovering the cause of the Dry-Rot in Timber, and disclosing a certain method of Prevention; I beg leave to lay before them an account of a method I have put in practice, and which at present appears to me to have fully succeeded.

The Dry-Rot having taken place in one of my parlours in such manner as to require

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the pulling down part of the wainscot every third year, and perceiving that it arose from a damp stagnated air, and from the moisture of the earth, I determined, in the month of June, 1783, to build a narrow closet next the wall through which the damp came to the parlour; which had the desired effect: but, though it put a total stop to the rot in the parlour, the evil soon appeared in the closet; fungi of a yellow colour arose to a great degree, in various parts of it. In the autumn of the year 1786, the closet was locked up about ten weeks: on opening it, numerous fungi were observed about the lower part of it, and a white mould was spread by a plant resembling a vine or sea-weed, and the whole of the inside, china, &c. was covered with a fine powder of the colour of brick-duft. It being then cleaned out, I soon perceived, what, indeed, I did not expect, that the evil had impregnated the wood so far as to run through every shelf therein, and the brackets that supported them; it had also seized upon and destroyed

stroyed a movable board for breaking fugaron. I therefore, in the beginning of the year 1787, determined to strip the whole closet of lining and floor, and not leave a particle of the wood behind, and also to dig and take away about two feet of the earth in depth, and leave the walls to dry, so as to destroy the roots or seeds of the evil. When by time and the admission of air, and good brushing, it had become sufficiently dry and cleansed, I filled it, of sufficient height for my joists, with anchor-smiths ashes; knowing that no vegetable would grow in them. My joists being sawed off to their proper lengths, and fully prepared, they and the plates were well charred, and laid upon the ashes; particular directions being given that not any scantling or board might be cut or planed in the place, lest any dust or shavings might drop among the ashes. My flooring boards being very dry, I caused them to be laid close, to prevent the dirt getting down, which, I thought, in a course of time might bring on vegetation.

The

The framing for lining the closet was then fixed up, having all the lower pannels let in to be fastened with buttons only, that, in case any vegetation should arise, the pannels might with ease be taken out to examine them.

This having now been done upwards of six years, and no vegetation or damp appearing, the whole of the pannels and floor remaining in the same state as when first put in, I shall have a satisfaction in taking a part of the floor up, if the Society think proper to appoint a Committee to examine the place.

If what I have produced meets the approbation of the Society, I wish it made public under their sanction, that as full a trial as possible may be made of it; and if at a proper distance of time it proves of general utility, any honorary token of the Society's approbation will be received with much satisfaction by me.

I think it may be highly necessary, in some situations; to take out a greater depth of earth; and where ashes can be had from a
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foundry,

foundery, they are fully equal to those from anchor-smiths; but by no means depend upon house-ashes.

I am, SIR,

Your very humble servant,

ROBERT BATSON.

Limehouse,
December 7, 1793.

MR. MORE.

IN consequence of the foregoing letter, a Committee was appointed to examine and report the state of the closet, who having met on the 15th of May, 1794, and the wainscot being taken down, and the flooring boards taken up, they were all found entirely free from any appearance of the rot; and, from all the circumstances then observed, it was the opinion of the Committee, that the method advised by Mr. Batson, when fully and completely put in execution, appeared to have answered every intention mentioned
in

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in his letter; and this opinion seemed the more justly founded, as two pieces of wood, (yellow fir) which had been driven into the wall as plugs, without being previously *charred*, were affected with the rot.